

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	09/853451	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2007/07/30 16:48
L2	25	("5098526"   "5147819"   "5389575"   "5480814"   "5525837"   "5550084"   "5668411"   "5719446"   "5847459"   "5847463"   "5856707"   "5883433"   "5893752"   "5903054"   "5933758"   "5939788"   "5968333"   "6069068"   "6100194"   "6140231"   "6174799"   "6217721").PN. OR ("6545357").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/07/30 16:49
L3	561	((barrier and seed) and thick\$4 and (via open\$3 trench slot)).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2007/07/30 16:50
L4	16	3 and ((barrier same (zirconium hafnium "Zr" "Hf"))).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/30 16:51
L5	44	3 and (aluminum same seed).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/30 16:52
S1	11	((("6436787") or ("6362012") or ("20020047153") or ("5940319") or ("6153443") or ("6197688") or ("6465867") or ("5741626") or ("6312874") or ("5821168") or ("6194304")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	OFF	2006/08/25 12:21
S2	0	((("6436787") or ("6362012") or ("20020047153") or ("5940319") or ("6153443") or ("6197688") or ("6465867") or ("5741626") or ("6312874") or ("5821168") or ("6194304")).PN.) and seed and (barrier or adhes\$4) and coper and aluminum	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 13:00
S3	3	((("6436787") or ("6362012") or ("20020047153") or ("5940319") or ("6153443") or ("6197688") or ("6465867") or ("5741626") or ("6312874") or ("5821168") or ("6194304")).PN.) and seed and (barrier or adhes\$4) and copper and aluminum	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 13:00
S4	45	("2842438" "20010002333" "20020014646" "20020028552" "20020096768" "20020109233" "3954570" "4386116" "4394223" "4423547" "4565157" "4574095" "4762728" "4788082" "4847111" "4931410" "4962058" "4984459" "4996584" "5019531" "5034799" "5084412" "5100499" "5130274" "5158986" "5173442" "5231056" "5240878" "5243222" "5256205" "5334356" "5354712" "5371042" "5384284" "5413687" "5426330" "5442237" "5447887" "5470789" "5470801" "5506449" "5538922" "5539060" "5595937").pn.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 13:46
S5	48	("5609721" "5635253" "5654245" "5670420" "5674787" "5679608" "5681441" "5695810" "5719089" "5719410" "5739579" "5763953" "5780358" "5785570" "5792522" "5801098" "5814557" "5821168" "5824599" "5858877" "5891797" "5891804" "5895740" "5897370" "5907772" "5911113" "5925930" "5930669" "5932928" "5940733" "5948467" "5962923" "5972179" "5972804" "5976710" "5981350" "5985759" "5989623" "5994777" "6008117" "6015465" "6017820" "6030877" "6065424" "6069068" "6071810" "6100193" "6126989").pn.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 13:46
S6	37	("6136095" "6139699" "6140228" "6140234" "6143646" "6150261" "6153507" "6159769" "6171661" "6177350" "6183564" "6187656" "6190732" "6197688" "6207222" "6207553" "6207558" "6211049" "6211073" "6221763" "6232219" "6249056" "6265311" "6271592" "6284656" "6287954" "6323553" "6326303" "6359328" "6372622" "6376370" "6387542" "6399489" "6403481" "6420262" "6426289" "6429120").PN.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 13:46

# EAST Search History

S7	130	((("2842438" "20010002333" "20020014646" "20020028552" "20020096768" "20020109233" "3954570" "4386116" "4394223" "423547" "4565157" "4574095" "4762728" "4788082" "4847111" "4931410" "4962058" "4984459" "4996584" "5019531" "503479" "5084412" "5100499" "5130274" "5158986" "5173442" "5231056" "5240878" "5243222" "5256205" "5334356" "5354712" "5371042" "5384284" "5413687" "5426330" "5442237" "5447887" "5470789" "5470801" "5506449" "5538922" "5539060" "5595937" "").pn.) ((("5609721" "5635253" "5654245" "5670420" "5674787" "5679608" "5681441" "5695810" "5719089" "5719410" "5739579" "5763953" "5780358" "5785570" "5792522" "5801098" "5814557" "5821168" "5824599" "5858877" "5891797" "5891804" "5895740" "5897370" "5907772" "5911113" "5925930" "5930669" "5932928" "5940733" "5948467" "5962923" "5972179" "5972804" "5976710" "5981350" "5985759" "5989623" "5994777" "6008117" "6015465" "6017820" "6030877" "6065424" "6069068" "6071810" "6100193" "6126989" .pn.) ((("6136095" "6139699" "6140228" "6140234" "6143646" "6150261" "6153507" "6159769" "6171661" "6177350" "6183564" "6187656" "6190732" "6197688" "6207222" "6207553" "6207558" "6211049" "6211073" "6221763" "6232219" "6249056" "6265311" "6271592" "6284656" "6287954" "6323553" "6326303" "6359328" "6372622" "6376370" "6387542" "6399489" "6403481" "6420262" "6426289" "6429120" .PN.))	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 13:46
S8	153	farrar-paul-a.in.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 15:09
S9	23	farrar-paul-a.in. and (seed adj layer) and via\$2 and barrier	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/01/31 15:31
S10	5	(farrar-paul-a.in. and (seed adj layer) and via\$2 and barrier) and ((seed adj layer) and via\$2 and barrier).clm.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 13:54
S11	21	("2842438" "4762728" "4847111" "4962058" "5084412" "5130274" "5158986" "5173442" "5231056" "5654245" "5670420" "5763953" "5824599" "5891797" "5948467" "5994777" "6071810" "6140228" "6171661" "6197688" "6207222" .PN.	USPAT	OR	ON	2004/08/27 13:54
S12	9	("4574095" "4789648" "4894260" "4985750" "5151168" "5183795" "5192581" "5240497" "5580668" .PN.	USPAT	OR	ON	2004/08/27 13:59
S13	40	((("2842438" "20010002333" "20020014646" "20020028552" "20020096768" "20020109233" "3954570" "4386116" "4394223" "4423547" "4565157" "4574095" "4762728" "4788082" "4847111" "4931410" "4962058" "4984459" "4996584" "5019531" "503479" "5084412" "5100499" "5130274" "5158986" "5173442" "5231056" "5240878" "5243222" "5256205" "5334356" "5354712" "5371042" "5384284" "5413687" "5426330" "5442237" "5447887" "5470789" "5470801" "5506449" "5538922" "5539060" "5595937" "7" .pn.) ((("5609721" "5635253" "5654245" "5670420" "5674787" "5679608" "5681441" "5695810" "5719089" "5719410" "5739579" "5763953" "5780358" "5785570" "5792522" "5801098" "5814557" "5821168" "5824599" "5858877" "5891797" "5891804" "5895740" "5897370" "5907772" "5911113" "5925930" "5930669" "5932928" "5940733" "5948467" "5962923" "5972179" "5972804" "5976710" "5981350" "5985759" "5989623" "5994777" "6008117" "6015465" "6017820" "6030877" "6065424" "6069068" "6071810" "6100193" "6126989" .pn.) ((("6136095" "6139699" "6140228" "6140234" "6143646" "6150261" "6153507" "6159769" "6171661" "6177350" "6183564" "6187656" "6190732" "6197688" "6207222" "6207553" "6207558" "6211049" "6211073" "6221763" "6232219" "6249056" "6265311" "6271592" "6284656" "6287954" "6323553" "6326303" "6359328" "6372622" "6376370" "6387542" "6399489" "6403481" "6420262" "6426289" "6429120" .PN.)) and (seed adj layer) and via\$2 and barrier and via\$2 and substrate	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 14:02

# EAST Search History

S14	34	<p>((("2842438" "20010002333" "20020014646" "20020028552" "20020096768" "20020109233" "3954570" "4386116" "4394223" "4423547" "4565157" "4574095" "4762728" "4788082" "4847111" "4931410" "4962058" "4984459" "4996584" "5019531" "5034799" "5084412" "5100499" "5130274" "5158986" "5173442" "5231056" "5240878" "5243222" "5256205" "5334356" "5354712" "5371042" "5384284" "5413687" "5426330" "5442237" "5447887" "5470789" "5470801" "5506449" "5538922" "5539060" "5595937" .pn.)</p> <p>((("5609721" "5635253" "5654245" "5670420" "5674787" "5679608" "5681441" "5695810" "5719089" "5719410" "5739579" "5763953" "5780358" "5785570" "5792522" "5801098" "5814557" "5821168" "5824599" "5858877" "5891797" "5891804" "5895740" "5897370" "5907772" "5911113" "5925930" "5930669" "5932928" "5940733" "5948467" "5962923" "5972179" "5972804" "5976710" "5981350" "5985759" "5989623" "5994777" "6008117" "6015465" "6017820" "6030877" "6065424" "6069068" "6071810" "6100193" "6126989" .pn.)</p> <p>((("6136095" "6139699" "6140228" "6140234" "6143646" "6150261" "6153507" "6159769" "6171661" "6177350" "6183564" "6187656" "6190732" "6197688" "6207222" "6207553" "6207558" "6211049" "6211073" "6221763" "6232219" "6249056" "6265311" "6271592" "6284656" "6287954" "6323553" "6326303" "6359328" "6372622" "6376370" "6387542" "6399489" "6403481" "6420262" "6426289" "6429120" .PN.)) and (seed adj layer) and via\$2 and barrier and via\$2 and substrate) not farrar-paul-a.in.</p>	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 14:02
S15	33	<p>((("2842438" "20010002333" "20020014646" "20020028552" "20020096768" "20020109233" "3954570" "4386116" "4394223" "4423547" "4565157" "4574095" "4762728" "4788082" "4847111" "4931410" "4962058" "4984459" "4996584" "5019531" "5034799" "5084412" "5100499" "5130274" "5158986" "5173442" "5231056" "5240878" "5243222" "5256205" "5334356" "5354712" "5371042" "5384284" "5413687" "5426330" "5442237" "5447887" "5470789" "5470801" "5506449" "5538922" "5539060" "5595937" .pn.)</p> <p>((("5609721" "5635253" "5654245" "5670420" "5674787" "5679608" "5681441" "5695810" "5719089" "5719410" "5739579" "5763953" "5780358" "5785570" "5792522" "5801098" "5814557" "5821168" "5824599" "5858877" "5891797" "5891804" "5895740" "5897370" "5907772" "5911113" "5925930" "5930669" "5932928" "5940733" "5948467" "5962923" "5972179" "5972804" "5976710" "5981350" "5985759" "5989623" "5994777" "6008117" "6015465" "6017820" "6030877" "6065424" "6069068" "6071810" "6100193" "6126989" .pn.)</p> <p>((("6136095" "6139699" "6140228" "6140234" "6143646" "6150261" "6153507" "6159769" "6171661" "6177350" "6183564" "6187656" "6190732" "6197688" "6207222" "6207553" "6207558" "6211049" "6211073" "6221763" "6232219" "6249056" "6265311" "6271592" "6284656" "6287954" "6323553" "6326303" "6359328" "6372622" "6376370" "6387542" "6399489" "6403481" "6420262" "6426289" "6429120" .PN.)) and (seed adj layer) and via\$2 and barrier and via\$2 and substrate) not farrar-paul-a.in.) and (insulat\$4 or oxide or dielectric)</p>	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 14:03

# EAST Search History

S16	17	(((((("2842438" "20010002333" "20020014646" "20020028552" "20020096768" "20020109233" "3954570" "4386116" "4394223" "4423547" "4565157" "4574095" "4762728" "4788082" "4847111" "4931410" "4962058" "4984459" "4996584" "5019531" "5034799" "5084412" "5100499" "5130274" "5158986" "5173442" "5231056" "5240878" "5243222" "5256205" "5334356" "5354712" "5371042" "5384284" "5413687" "5426330" "5442237" "5447887" "5470789" "5470801" "5506449" "5538922" "5539060" "5595937" .pn.) ((("5609721" "5635253" "5654245" "5670420" "5674787" "5679608" "5681441" "5695810" "5719089" "5719410" "5739579" "5763953" "5780358" "5785570" "5792522" "5801098" "5814557" "5821168" "5824599" "5858877" "5891797" "5891804" "5895740" "5897370" "5907772" "5911113" "5925930" "5930669" "5932928" "5940733" "5948467" "5962923" "5972179" "5972804" "5976710" "5981350" "5985759" "5989623" "5994777" "6008117" "6015465" "6017820" "6030877" "6065424" "6069068" "6071810" "6100193" "6126989" .pn.) ((("6136095" "6139699" "6140228" "6140234" "6143646" "6150261" "6153507" "6159769" "6171661" "6177350" "6183564" "6187656" "6190732" "6197688" "6207222" "6207553" "6207558" "6211049" "6211073" "6221763" "6232219" "6249056" "6265311" "6271592" "6284656" "6287954" "6323553" "6326303" "6359328" "6372622" "6376370" "6387542" "6399489" "6403481" "6420262" "6426289" "6429120" .PN.)) and (seed adj layer) and via\$2 and barrier and via\$2 and substrate) not farrar-paul-a.in.) and (insulat\$4 or oxide or dielectric)) and (polymer or polyimide)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 14:04
S17	26	("2842438" "3954570" "4386116" "4788082" "4931410" "4962058" "5100499" "5158986" "5173442" "5240878" "5256205" "5334356" "5470789" "5470801" "5506449" "5635253" "5659193" "5674787" "5679608" "5681441" "5695810" "5717236" "5785570" "5913147" "5982040" "6107657" .PN.	USPAT	OR	ON	2004/08/27 14:05
S18	3	"6465867"	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 15:58
S19	6	("6057237" "6136682" "6140231" "6144096" "6146993" "6348732" .PN.	USPAT	OR	ON	2004/08/27 15:09
S20	2	("6136682" "6181012" .PN.	USPAT	OR	ON	2004/08/27 15:11
S21	1	"6465867".URPN.	USPAT	OR	ON	2004/08/27 15:12
S22	2	"6348732".URPN.	USPAT	OR	ON	2004/08/27 15:12
S23	6	("4933743" "4933754" "6127258" "6326305" "6348732" "6417566" .PN.	USPAT	OR	ON	2004/08/27 15:13
S24	2	("6136682" "6181012" .PN.	USPAT	OR	ON	2004/08/27 15:14
S25	2	"6348732".URPN.	USPAT	OR	ON	2004/08/27 15:15
S26	57	substrate and (conductor adj core) and (channel adj stop) and (barrier with adhesion) and (seed adj layer)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 15:58
S27	57	(substrate and (conductor adj core) and (channel adj stop) and (barrier with adhesion) and (seed adj layer)) and (dielectric or insulat\$4) and (contact\$4 or plug) and copper	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 15:59

# EAST Search History

S28	57	((substrate and (conductor adj core) and (channel adj stop) and (barrier with adhesion) and (seed adj layer)) and (dielectric or insulat\$4) and (contact\$4 or plug) and copper) not (((("2842438" "20010002333" "20020014646" "20020028552" "20020096768" "20020109233" "3954570" "4386116" "4394223" "4423547" "4565157" "4574095" "4762728" "4788082" "4847111" "4931410" "4962058" "4984459" "4996584" "5019531" "5034799" "5084412" "5100499" "5130274" "5158986" "5173442" "5231056" "5240878" "5243222" "5256205" "5334356" "5354712" "5371042" "5384284" "5413687" "5426330" "5442237" "5447887" "5470789" "5470801" "5506449" "5538922" "5539060" "5595937" .pn.) (("5609721" "5635253" "5654245" "5670420" "5674787" "5679608" "5681441" "5695810" "5719089" "5719410" "5739579" "5763953" "5780358" "5785570" "5792522" "5801098" "5814557" "5821168" "5824599" "5858877" "5891797" "5891804" "5895740" "5897370" "5907772" "5911113" "5925930" "5930669" "5932928" "5940733" "5948467" "5962923" "5972179" "5972804" "5976710" "5981350" "5985759" "5989623" "5994777" "6008117" "6015465" "6017820" "6030877" "6065424" "6069068" "6071810" "6100193" "6126989" .pn.) (("6136095" "6139699" "6140228" "6140234" "6143646" "6150261" "6153507" "6159769" "6171661" "6177350" "6183564" "6187656" "6190732" "6197688" "6207222" "6207553" "6207558" "6211049" "6211073" "6221763" "6232219" "6249056" "6265311" "6271592" "6284656" "6287954" "6323553" "6326303" "6359328" "6372622" "6376370" "6387542" "6399489" "6403481" "6420262" "6426289" "6429120" .PN.)) farrar-paul-a.in.)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 16:14
S29	14	("6083835" "6100184" "6114243" "6130161" "6157081" "6159845" "6258713" "6261950" "6274499" "6281127" "6288448" "6309970" "6323135" "6350678" .PN.	USPAT	OR	ON	2004/08/27 16:03
S30	10	("5483568" "5772780" "5804513" "6103625" "6123088" "6143662" "6191027" "6200901" "6221775" "6232231" .PN.	USPAT	OR	ON	2004/08/27 16:06
S31	4	"6326305".URPN.	USPAT	OR	ON	2004/08/27 16:06
S32	14	("6083835" "6100184" "6114243" "6130161" "6157081" "6159845" "6258713" "6261950" "6274499" "6281127" "6288448" "6309970" "6323135" "6350678" .PN.	USPAT	OR	ON	2004/08/27 16:08
S33	3	("5928962" "6227949" "6235071" .PN.	USPAT	OR	ON	2004/08/27 16:09
S34	3	"6350678".URPN.	USPAT	OR	ON	2004/08/27 16:09
S35	40	("2842438" "4565157" "4762728" "4847111" "4962058" "5084412" "5130274" "5158986" "5173442" "5231056" "5240878" "5371042" "5413687" "5609721" "5654245" "5670420" "5763953" "5824599" "5891797" "5948467" "5962923" "5972179" "5994777" "6017820" "6065424" "6015465" "6071810" "6136095" "6136699" "6140228" "6143646" "6153507" "6171661" "6177350" "6183564" "6190732" "6197688" "6207222" "6265311" "6271592" .PN.	USPAT	OR	ON	2004/08/27 16:13
S36	13	"6277263"	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/27 16:14
S37	17	(US-6465867-\$ or US-6207222-\$ or US-5824599-\$ or US-6287954-\$ or US-6069068-\$ or US-6348732-\$ or US-6146993-\$ or US-6140231-\$ or US-6144096-\$ or US-6136682-\$ or US-6181012-\$ or US-6541860-\$ or US-6326305-\$ or US-6127258-\$ or US-4933743-\$ or US-6350678-\$ or US-6277263-\$).did.	USPAT	OR	OFF	2004/08/30 17:02
S38	3	((US-6465867-\$ or US-6207222-\$ or US-5824599-\$ or US-6287954-\$ or US-6069068-\$ or US-6348732-\$ or US-6146993-\$ or US-6140231-\$ or US-6144096-\$ or US-6136682-\$ or US-6181012-\$ or US-6541860-\$ or US-6326305-\$ or US-6127258-\$ or US-4933743-\$ or US-6350678-\$ or US-6277263-\$).did.) and liner	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/30 17:07

## EAST Search History

S39	2	(titanium adj silicide adj liner) and (metallization) and via\$2 and (insulat\$4 and substrate)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/30 17:09
S40	2	titanium adj silicide adj liner	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/30 17:09
S41	17	silicide adj liner	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/30 17:09
S42	15	(silicide adj liner) not (titanium adj silicide adj liner)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2004/08/30 17:09
S43	18	(US-4933743-\$ or US-5824599-\$ or US-6069068-\$ or US-6127258-\$ or US-6136682-\$ or US-6140231-\$ or US-6144096-\$ or US-6146993-\$ or US-6181012-\$ or US-6207222-\$ or US-6277263-\$ or US-6287954-\$ or US-6326305-\$ or US-6348732-\$ or US-6350678-\$ or US-6376368-\$ or US-6465867-\$ or US-6541860-\$).did.	USPAT	OR	OFF	2005/03/02 16:45
S44	180	farrar-paul-a.in.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2005/03/02 16:19
S45	1384	substrate and (via or opening)and seed and barrier and (dielectric or insulat\$4) and metal\$4 and angstrom	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2005/03/02 16:47
S46	1362	S45 not (S43 S44)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2005/03/02 16:47
S47	100	S46 and ("Hf" or hafnium) and ("Zr" or zirconium)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2005/03/02 16:47
S48	49	S47 and (polyimide or polymer)	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2005/03/02 16:48
S49	34	S48 and (etch\$4 adj (barrier or stop))	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2005/03/02 17:11
S50	15	S48 not S49	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2005/03/02 16:56
S51	10	((("5937320") or ("6103320") or ("6208016") or ("6245662") or ("6288442") or ("6358849") or ("6552432") or ("6614099") or ("6743716") or ("6756298"))).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	OFF	2005/03/02 17:01
S52	1	"20040217481"	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2005/03/02 17:12
S53	3	((("20050023699") or ("20040217481") or ("20050023697"))).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	OFF	2005/03/02 17:12

## EAST Search History

S54	10	("5633200" "6143655" "6169024" "6215186" "6258707" "6288447" "6417094" "6492266" "6589863" "6740392").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2006/01/31 16:01
S55	7	((("5348811") or ("5401680") or ("5789264") or ("6143671") or ("6251781") or ("6303498") or ("6365511")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	OFF	2006/01/31 18:57
S56	6947	(substrate or board or motherboard or "PCB" or "PWB") and (insulat\$3 or dielectric) and barrier and seed and metal\$4 and (via or trench or open\$3 or groove or slot) and thickness	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2006/01/31 19:13
S57	5400	S56 and ((second or upper or above or over or top) with (dielectric or insulat\$3))	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2006/01/31 19:01
S58	1492	S57 and (@rlad<"20000118" or @ad<"20000118")	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2006/01/31 19:14
S59	439	S58 and ((dielectric or insulat\$3) with (polymer or polyim\$3))	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2006/01/31 19:03
S60	46	S59 and (zirconium)	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2006/01/31 19:04
S61	83	((substrate or board or motherboard or "PCB" or "PWB") and (insulat\$3 or dielectric) and barrier and seed and metal\$4 and (via or trench or open\$3 or groove or slot) and thickness).clm.	US-PGPUB	OR	ON	2006/08/26 19:10
S62	83	S61 not S60	US-PGPUB	OR	ON	2006/01/31 19:13
S63	10	S62 and (@rlad<"20000118" or @ad<"20000118")	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2006/01/31 19:15
S64	73	S62 not S63	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2006/01/31 19:18
S65	1440	257/751.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2006/01/31 19:18
S66	63	("5171712" "5635423" "5985762" "6001736" "6037664" "6054398" "6107186" "6117781" "6117782" "6121149" "6121150" "6143604" "6143650" "6174800" "6184121" "6194317" "6204096" "6211071" "6224690" "6228754" "6232230" "6239017" "6261946" "6262376" "6280640" "6319834" "6368965" "6410418" "6410442" "6515323" "6518173" "6710447").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:25

# EAST Search History

S67	95	("2842438" "20010002333" "20020014646" "20020028552" "20020096768" "20020109233" "20050023697" "20050023699" "3954570" "4213818" "4386116" "4394223" "4423547" "4565157" "4574095" "4762728" "4788082" "4847111" "4931410" "4962058" "4984459" "4996584" "5019531" "5034799" "5084412" "5100499" "5130274" "5158986" "5171712" "5173442" "5231056" "5240878" "5243222" "5256205" "5334356" "5348811" "5354712" "5371042" "5384284" "5401680" "5413687" "5426330" "5442237" "5447887" "5461243" "5470789").pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 12:22
S68	98	("5470801" "5506449" "5538922" "5539060" "5595937" "5609721" "5633200" "5635253" "5635423" "5654245" "5670420" "5674787" "5679608" "5681441" "5695810" "5719089" "5719410" "5739579" "5763953" "5780358" "5785570" "5789264" "5792522" "5801098" "5814557" "5821168" "5824599" "5858877" "5891797" "5891804" "5895740" "5897370" "5907772" "5911113" "5925930" "5930669" "5932928" "5937320" "5940733" "5948467" "5962923" "5972179" "5972804" "5976710" "5981350" "5985759" "5985762" "5989623").pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 12:24
S69	99	("5994777" "6001736" "6008117" "6015465" "6017820" "6030877" "6037664" "6054398" "6065424" "6069068" "6071810" "6100193" "6103320" "6107186" "6117781" "6117782" "6120641" "6121149" "6121150" "6126989" "6136095" "6139699" "6140228" "6140234" "6143604" "6143646" "6143650" "6143655" "6143671" "6150261" "6153507" "6159769" "6169024" "6171661" "6174800" "6177350" "6183564" "6184121" "6187656" "6190732" "6194317" "6197181" "6197688" "6204096" "6207222" "6207553" "6207558" "6208016" "6211049").pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 12:24
S70	95	("6211071" "6211073" "6215186" "6221763" "6224690" "6228754" "6232219" "6232230" "6239017" "6245662" "6249056" "6251781" "6255217" "6258707" "6261946" "6262376" "6265311" "6271592" "6277263" "6280640" "6284656" "6287954" "6288442" "6288447" "6290833" "6303498" "6313035" "6319834" "6323553" "6326303" "6350678" "6350687" "6358849" "6359328" "6361667" "6365511" "6368965" "6368966" "6372622" "6376368" "6376370" "6387542" "6399489" "6403481" "6410418" "6410442" "6417094" "6420262").pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 12:25
S71	44	("6426289" "6428673" "6429120" "6486533" "6492266" "6508920" "6515323" "6518173" "6552432" "6562416" "6565729" "6573182" "6589863" "6614099" "6632345" "6638410" "6664197" "6674169" "6710447" "6740392" "6743716" "6756298").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 12:25
S72	420	S66 S67 S68 S69 S70 S71	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 12:25
S73	110	S72 and (seed and barrier) and (via trench contact plug)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:11
S74	10	S73 and ((via trench contact plug) with liner)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 12:26
S75	22	("2842438" "4762728" "4847111" "4962058" "5084412" "5130274" "5158986" "5173442" "5231056" "5654245" "5670420" "5763953" "5824599" "5891797" "5948467" "5994777" "6071810" "6140228" "6171661" "6197688" "6207222").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2006/08/25 12:27



## EAST Search History

S76	1	10/789882	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 19:48
S77	13	"6358849"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 13:40
S78	6	S77 and (polyme\$3 polyimide)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 13:41
S79	63	("5171712" "5635423" "5985762" "6001736" "6037664" "6054398" "6107186" "6117781" "6117782" "6121149" "6121150" "6143604" "6143650" "6174800" "6184121" "6194317" "6204096" "6211071" "6224690" "6228754" "6232230" "6239017" "6261946" "6262376" "6280640" "6319834" "6368965" "6410418" "6410442" "6515323" "6518173" "6710447").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:25
S80	23	S79 and (seed and barrier) and (via trench contact plug)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:29
S81	0	S80 and (barrier with (zirconium or "Zr"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:32
S82	0	S80 and (barrier same (zirconium or "Zr"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:27
S83	1	S80 and (zirconium or "Zr")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:27
S84	2022	(substrate wafer) and (seed and barrier) and (via trench contact plug) and (zirconium or "Zr")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:30
S85	1937	S84 and (aluminum or "Al")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:30
S86	558	S84 and (@ad<"20000118" @rlad<"20000118")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:18

## EAST Search History

S88	551	S85 and S86	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:31
S89	51	S88 and (barrier with (zirconium or "Zr"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:49
S90	25	S89 and (barrier with ((tantalum near2 nitride) or "TaN"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:49
S91	26	S89 not S90	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:47
S92	65	(S88 not S89) and (barrier same (zirconium or "Zr"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 17:49
S93	18	S92 and (barrier with ((tantalum near2 nitride) or "TaN"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 18:08
S94	47	S92 not S93	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 18:02
S95	2	"6989593"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/25 19:48

# EAST Search History

S96	133	("20010001505"   "20010040279"   "20010045644"   "20020053731"   "20020072214"   "20020096767"   "20020098617"   "20020171144"   "20020180040"   "20020185717"   "20030138613"   "20040072456"   "3790866"   "4611238"   "5045921"   "5065281"   "5173766"   "5208504"   "5216278"   "5285352"   "5291062"   "5294826"   "5366589"   "5394009"   "5397917"   "5397921"   "5409865"   "5433631"   "5438216"   "5474957"   "5490324"   "5534467"   "5541450"   "5552635"   "5572405"   "5578869"   "5583377"   "5583378"   "5642261"   "5648679"   "5650659"   "5650662"   "5691567"   "5717252"   "5736785"   "5744863"   "5796170"   "5798909"   "5801432"   "5835355"   "5843808"   "5844168"   "5856911"   "5866949"   "5883430"   "5889321"   "5889324"   "5894410"   "5895967"   "5901041"   "5903052"   "5905633"   "5907189"   "5907903"   "5920117"   "5949137"   "5953589"   "5972734"   "5976912"   "5977626"   "5977633"   "5982621"   "5986340"   "5986885"   "5998241"   "5999415"   "6002147"   "6002169"   "6011304"   "6011694"   "6020221"   "6020637"   "6028358"   "6034427"   "6040984"   "6057601"   "6060777"   "6069407"   "6077724"   "6084297"   "6084777"   "6114761"   "6117797"   "6122171"   "6133064"   "6140707"   "6160705"   "6162659"   "6163458"   "6166434"   "6184580"   "6201300"   "6207467"   "6212070"   "6242279"   "6246111"   "6278613"   "6288444"   "6313521"   "6313525"   "6347037"   "6362525"   "6369455"   "6376907"   "6380623"   "6462274"   "6472741"   "6525942"   "6528869"   "6528892"   "6541832").PN. OR ("6545351"   "6552266"   "6552428"   "6552430"   "6563712"   "6583516"   "6614660"   "6617193"   "6657870"   "6664617"   "6724071"   "6724080").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2006/08/26 18:13
S97	133	("20010001505"   "20010040279"   "20010045644"   "20020053731"   "20020072214"   "20020096767"   "20020098617"   "20020171144"   "20020180040"   "20020185717"   "20030138613"   "20040072456"   "3790866"   "4611238"   "5045921"   "5065281"   "5173766"   "5208504"   "5216278"   "5285352"   "5291062"   "5294826"   "5366589"   "5394009"   "5397917"   "5397921"   "5409865"   "5433631"   "5438216"   "5474957"   "5490324"   "5534467"   "5541450"   "5552635"   "5572405"   "5578869"   "5583377"   "5583378"   "5642261"   "5648679"   "5650659"   "5650662"   "5691567"   "5717252"   "5736785"   "5744863"   "5796170"   "5798909"   "5801432"   "5835355"   "5843808"   "5844168"   "5856911"   "5866949"   "5883430"   "5889321"   "5889324"   "5894410"   "5895967"   "5901041"   "5903052"   "5905633"   "5907189"   "5907903"   "5920117"   "5949137"   "5953589"   "5972734"   "5976912"   "5977626"   "5977633"   "5982621"   "5986340"   "5986885"   "5998241"   "5999415"   "6002147"   "6002169"   "6011304"   "6011694"   "6020221"   "6020637"   "6028358"   "6034427"   "6040984"   "6057601"   "6060777"   "6069407"   "6077724"   "6084297"   "6084777"   "6114761"   "6117797"   "6122171"   "6133064"   "6140707"   "6160705"   "6162659"   "6163458"   "6166434"   "6184580"   "6201300"   "6207467"   "6212070"   "6242279"   "6246111"   "6278613"   "6288444"   "6313521"   "6313525"   "6347037"   "6362525"   "6369455"   "6376907"   "6380623"   "6462274"   "6472741"   "6525942"   "6528869"   "6528892"   "6541832").PN. OR ("6545351"   "6552266"   "6552428"   "6552430"   "6563712"   "6583516"   "6614660"   "6617193"   "6657870"   "6664617"   "6724071"   "6724080").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2006/08/26 18:14
S98	0	("6989593").URPN.	USPAT	OR	ON	2006/08/26 18:14
S99	721	(substrate wafer "PCB" "PWB" board) and seed and (barrier same (zirconium "Zr" hafnium "Hf")) and (via trench contact plug) and (copper "Cu" aluminum "Al"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:42
S10 0	318	S99 and (barrier with (zirconium "Zr" hafnium "Hf"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:58

## EAST Search History

S10 1	3	S100 and (((titanium near2 silicide) "TiSi") near2 liner)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:28
S10 2	34	S100 and (((titanium near2 silicide) "TiSi"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:18
S10 3	67	S100 and (@ad<"20000118" @rlad<"20000118")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:44
S10 4	15	S102 and S103	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:24
S10 5	7	09/145012	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:24
S10 7	52	S103 not (S101 S104 S105)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:30
S10 8	181	(substrate wafer "PCB" "PWB" board) and seed and (barrier same (zirconium "Zr" hafnium "Hf")) and (copper "Cu" aluminum "Al") and (@ad<"20000118" @rlad<"20000118")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:43
S10 9	114	S108 not (S101 S104 S105 S107)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:44
S11 0	0	S109 and (barrier with (zirconium "Zr" hafnium "Hf"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 20:05
S11 1	4442	(barrier with (zirconium "Zr" hafnium "Hf"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:43
S11 2	81	S111 and seed and (@ad<"20000118" @rlad<"20000118")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 20:30

## EAST Search History

S11 3	14	S112 not (S101 S104 S105 S107)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:47
S11 4	382	((zirconium or "Zr") near2 barrier) and (@ad<"20000118" @rlad<"20000118")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:52
S11 5	374	S114 not (S101 S104 S105 S107 S113)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 20:00
S11 6	0	S115 and seed	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:48
S11 7	115	S115 and adhes\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:49
S11 8	55	S117 and (copper "Cu")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:49
S11 9	111	((hafnium or "Hf") near3 barrier) and (@ad<"20000118" @rlad<"20000118")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:52
S12 0	100	S119 not (S101 S104 S105 S107 S113)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:53
S12 1	0	S120 and seed	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:53
S12 2	29	S120 and adhesi\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 19:53
S12 3	3586	seed and barrier and (zirconium "Zr" hafnium "Hf") and (via plug contact hole trench slot) and (substrate wafer board "PCB" "PWB")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 20:01

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S12 4	1024	S123 not (S101 S104 S105 S107 S113 S118 S122) and (@ad<"20000118" @rlad<"20000118")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 20:01
S12 5	113	S124 and (barrier same (zirconium "Zr" hafnium "Hf"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 20:05
S12 6	232	"5,916,365"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 20:05
S12 7	14	S126 and (barrier same (zirconium "Zr" hafnium "Hf"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 20:28
S12 8	3153	((two bi dual) near2 (layer film plate) near2 barrier) and (aluminum "Al")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 20:29
S12 9	80	S128 and seed and (via plug contact hole trench slot) and (substrate wafer board "PCB" "PWB") and (@ad<"20000118" @rlad<"20000118")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 20:31
S13 0	41	(US-20020020920-\$ or US-20010010403-\$ or US-20020096768-\$ or US-20040169213-\$ or US-20050285272-\$ or US-20020094673-\$ or US-20010034106-\$ or US-20040130029-\$).did. or (US-6288442-\$ or US-6287954-\$ or US-6258710-\$ or US-6069068-\$ or US-6614099-\$ or US-6541860-\$ or US-6465867-\$ or US-6348732-\$ or US-6181012-\$ or US-6144096-\$ or US-6207222-\$ or US-5824599-\$ or US-6146993-\$ or US-6136682-\$ or US-6127258-\$ or US-4933743-\$ or US-6140231-\$ or US-6326305-\$ or US-6350678-\$ or US-6277263-\$ or US-6376368-\$ or US-6376370-\$ or US-6071810-\$ or US-6358849-\$ or US-6849927-\$ or US-5639316-\$).did. or (US-6589874-\$ or US-6399496-\$ or US-6800552-\$ or US-6353260-\$ or US-6184138-\$).did. or (US-2842438-\$).did. or (EP-881673-\$).did.	US-PGPUB; USPAT; USOCR; DERWENT	OR	ON	2006/08/26 20:54
S13 1	6	S130 and ((bit word) adj line)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/08/26 20:55
S13 2	1372	257/762.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 17:29

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S13 3	1570	257/751.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 17:37
S13 4	16138	257/462,751,758,750,e21.576,e21.584,e21.579,e21.585.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 17:41
S13 5	5867	438/633,689,690,628,692.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 17:41
S13 8	6	H01L23/532.ipc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 17:42
S13 9	1834	H01L23/48.ipc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 17:42
S14 0	1165	H01L21/302.ipc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 17:42
S14 1	23340	S134 S135 S138 S139 S140	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 17:46
S14 2	826	S141 and (barrier same (zirconium hafnium "Zr" "Hf"))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 19:54
S14 3	298	S142 and (@ad<"20000118" @rlad<"20000118")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 17:57
S14 4	226	S143 and (barrier same thick\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 17:59
S14 5	174	S144 and (barrier with thick\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 17:59

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S14 6	58	S145 and seed	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 19:55
S14 7	116	S145 not S146	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 19:53
S14 8	46	((barrier same (zirconium hafnium "Zr" "Hf")) and seed).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/02 11:01
S14 9	28	S148 and thick\$4.clm.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/02 11:59
S15 0	18	S148 not S149	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/01 19:56
S15 1	15	(US-20020109233-\$ or US-20040023486-\$ or US-20040169213-\$ or US-20040023489-\$).did. or (US-5882738-\$ or US-6171949-\$ or US-6376370-\$ or US-6703307-\$ or US-6770559-\$ or US-7105914-\$ or US-7115498-\$ or US-6015749-\$ or US-6268291-\$ or US-6727175-\$ or US-6740392-\$).did.	US-PGPUB; USPAT	OR	ON	2007/02/02 11:01
S15 2	6	S151 and ((barrier same (zirconium hafnium "Zr" "Hf")))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/07/30 16:51
S15 3	46	((barrier same (zirconium hafnium "Zr" "Hf")) and seed).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/02 11:59
S15 4	1	10/789882	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/02 11:59
S15 5	3	"7105914"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/02/04 17:26
S15 6	1438	257/762.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2007/07/26 17:21



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S15 7	189	257/571.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2007/07/26 17:21
S15 8	14890	(barrier adhesi\$3) same (zirconium hafnium "Zr" "Hf") and thick\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2007/07/30 16:50
S15 9	1283	S158 and (seed)	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2007/07/26 17:48
S16 0	321	S159 and (@ad<"20000118" @rlad<"20000118")	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2007/07/26 18:03
S16 1	59	S160 and (barrier with (dual double multi\$3 plural\$3))	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2007/07/26 18:04
S16 2	23	S161 and (barrier near3 (dual double multi\$3 plural\$3))	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2007/07/26 18:57
S16 3	36	S161 not S162	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2007/07/26 18:18
S16 4	3	09/089445	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2007/07/26 18:57
S16 5	7	("20010002333" "20020167089" "20060292857" "20070085213" "5451804" "6022802" "7211512").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2007/07/26 18:59